Schneckenberg, Dirk

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Tavangarian, Djamshid [Hrsg.]; Nölting, Kristin [Hrsg.]: Auf zu neuen Ufern! E-Learning heute und morgen. Münster / New York München / Berlin : Waxmann 2005, S. 207-216. - (Medien in der Wissenschaft; 34)

Djamshid Tavangarian,
Kristin Nölting (Hrsg.)

Auf zu neuen Ufern!

E-Learning heute und morgen

Waxmann Münster / New York
München / Berlin

Bibliografische Informationen Der Deutschen Bibliothek
Die Deutsche Bibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über http://dnb.ddb.de abrufbar.

Medien in der Wissenschaft; Band 34
Gesellschaft für Medien in der Wissenschaft e.V.

ISSN 1434-3436
ISBN 3-8309-1557-8

http://www.waxmann.com
E-Mail: info@waxmann.com

Umschlagentwurf: Pleßmann Kommunikationsdesign, Ascheberg
Umschlagbild: Andreas Becker
Druck: Buschmann, Münster
Gedruckt auf alterungsbeständigem Papier, DIN 6738

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Dirk Schneckenberg

The Relevance of Competence in the ICT Policy Goals of the European Commission

1 Strive for the knowledge society: ICT Policy Goals of the European Commission

In our globalised world of the 21st century knowledge has been identified as the key asset for the successful development of the European economy and society. In 2000 the European Council has used this implication for defining in the Lisbon decision the core policy goals towards building „... the most competitive and dynamic knowledge-based economy in the world by 2010 (Lisbon decision, 2000)". Subsequently, in 2002 the Education Council and the Commission adopted the „Education and Training 2010" programme that sets the target to make „... Europe the world leader in terms of the quality of its education and training systems (Education and Training 2010 Programme)", and outlines within the European Research Area the role of European higher education in the knowledge society.

As the creation of new knowledge is the core business of higher education establishments, the Commission has started in 2003 a debate on the role of universities within the knowledge society. In this communication the Commission implies that the growth of the knowledge society depends on four parameters, one of them being „... the dissemination of new knowledge through information and communication technologies (European Commission, Communication, „The role of universities in a Europe of knowledge", COM 2003)". Furthermore, the European Higher Education Ministers stress in the Communiqué of 2003 Berlin Conference that the qualification frameworks for the European Higher Education Area need to offer „... a wide range of flexible learning paths, opportunities and techniques (Berlin Communiqúe of the European Higher Education Ministers 2003)."

2 Search for the holy grail: ICT Potential in Higher Education

The ICT – related funding programmes at European as well as at national level have enabled the production of a wide range of digital tools designed to advance the societal development towards knowledge-intensive economy areas. In the

higher education sector these tools allow, i.e., ubiquitious and multi-modal access to and delivery of information, storing and retrieval of information, development of intersections between different data fields, communication and exchange of information in CSCW systems and scalable systems, to mention only some of the main technological applications.

The range of digital tools can all be understood as single bricks that can be used to construct a overarching knowledge management system in higher education institutions. Both learning systems and knowledge have been identified as two essential factors in supporting competence development. The challenge that is evolving when it comes to a sustainable integration of ICT in universities is to find a way to relate knowledge management and the existing teaching and learning systems and processes in higher education in such a manner that the solution integrates the need for handling tacit knowledge and the demand for more flexible and interactive learning processes.

The potential of ICT, to act as a driver and innovator in the European higher education, is unquestioned. But this potential of technology, to enrich and to enhance the teaching and learning process and to support flexible learning modes, has not yet been fully recognised nor systematically exploited in European universities. Various recent studies show that the integration of ICT into higher education establishments is being realised only at at low level (Collis & Van der Wende, 2002; Bett & Wedekind, 2003; Euler, 2004). The diffusion of new technologies seems to be diminishing at low level and threatens to fail at a margin that has been dubbed in one study as the 5% hurdle of eLearning integration into universities. (Bett & Wedekind, 2003, see also Zemsky & Massy, 2004) With reference to the diffusion model for innovations that Rogers has developed, in universities the use of ICT in teaching and learning is still driven in the academic staff by the „early adopters“ and thus far fails to be taken up by the „early majority“ (Rogers, 2003).

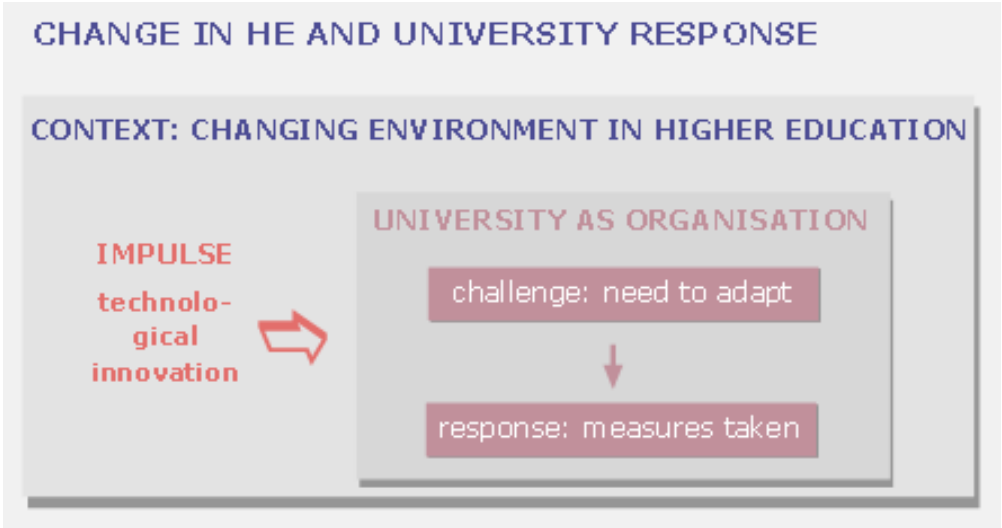

Abb. 1: Change in Higher Education and University Response

Collis and Van der Wende conducted in 2002 a survey on the use of ICT in higher education, in which they observed that, in the general picture, institutions are transferring from a period of mostly bottom-up experimentation to institution-wide encouragement of the use of ICT. With help of a three-stage model it is explained that

- in many analysed cases the first stage of institution-wide ICT implementation, i.e. the establishment of institution-wide technological infrastructure, is in place;
- the second stage, i.e. rich pedagogical use of this infrastructure, still in development;
- and the third stage, to be labelled as strategic use of ICT with a view to the different target groups of higher education, has not been considered explicitly yet. (Collis & Van der Wende, 2002)

The reasons for this low level of diffusion and integration of new technologies into higher education establishments are manifold. As a consequence the need for an institutional eStrategy has more and more moved into the focus of current discussion on eLearning in the higher education sector – a strategy to integrate ICT in a sustainable way into the work structure of the universities. The strategic use of ICT in the teaching and learning process as one core task of universities requires explicit reflection and decision-making on the institutional policy level.

But the strategy decisions related to ICT use also face some serious obstacles. On a broad scale European university management is not professionalised and does not possess the power to define and implement a normative eStrategy into all levels of the quite fragmented organisation structures. In the organisational theory quite some work has been devoted to the perspective on the university as organisation and significant concepts and behavior patterns that are stated in the studies such as e.g. loosely coupled systems, garbage can decision making and even organisational anarchy indicate the structural weaknesses of universities (Birnbaum, 2000; Enders, 2001; Pellert & Hanft, 2002) In addition neither the topic of eLearning nor the quality aspects in teaching and learning are currently core priorities of the university leadership.

3 Get your Team on Board: The eCompetence Perspective

So, how can the potential of new technology be adequately used in higher education? How can the digital tools systematically be applied to the daily business of the universities and complement the teaching and learning process? The approach chosen in this paper and applied in the ongoing research framework of the European eCompetence Initiative is to reduce the complexity of an university-wide

eStrategy tackling all possible aspects and to focus on the eCompetence topic that includes two specific change management areas for the ICT integration in higher education establishments:

- on individual level: competence of university teachers to use ICT for representation and dissemination of knowledge in teaching and learning
- on organisational level: conceptualise personnel development activities in human resources management and university leadership level for enhancing the competence of academic staff to use ICT in universities

The main implication for this eCompetence approach to the challenges in ICT policy is based in the assumption that the technological innovation process in universities (as any innovation in organisations) can only be successfully realised if the individual members of the organisation are aware on the need to adapt their work culture to the changing environment, which means in detail that

- the individual teacher as member of the academic staff realises the potential of ICT for enhancing teaching and learning in higher education and
- the individual teacher supports the flexible learning model by gradually applying technology into the daily teaching practice in the university.

The point of departure for this approach that has been chosen to reduce the complexity of the ICT integration challenge is to position the human factor as the focal element of eLearning innovation in universities. It is a well-known insight that technology always tends to outpace pedagogy. Also a major part in initial eLearning funding had set a strong emphasis on technology. But the full potential of eLearning cannot be realized unless there is a commitment, on the part of a large number of academic staff, to substantially improve the educational quality in universities. What is required is a concept to organize quality processes that complement curricular innovation with consistent ICT applications. In the current state of eLearning it is essential to exploit the set of digital tools for the day-to-day teaching and learning activities that the individual university teacher undertakes. And in oder to prepare any implementation of ICT into the course design, it is essential for the university teacher to reflect upon, to re-think the „traditionally“ used concept of learning.

To envision technology as a facilitator for learning means that the concept of learning needs to be placed into the centre of a reflection process on educational innovation. This pedagogical change in perspective is not a recent phenomena: the „shift from teaching to learning“ is a well-discussed topic that has already been around in pedagogy for some time (Behrend, 1998; Huba & Freed, 2000). What is quite new in European higher education though, are, in terms of socio-economic parameters, the changing university environment with increasing competition on global and integration elements on European scale, the changing role of the students, the challenges of life-long learning and the potential that ICT can bring into

the realisation of the pedagogical shift towards flexible learning (Wildt et al., 2003).

The objective to create and foster flexible, student-centered learning paths can be found in several EU policy reflections on the innovation of European higher education, in particular in relation to the ECTS process and the life-long learning challenges (Berlin Communiqúe, EUA Tuning Paper). If the normative higher education policy goal on ICT-supported flexible learning is to become reality in the real operating environment of any European university, the challenge is to create an awareness in the individual teacher, how his role in the teaching and learning setting can be gradually transformed from the traditional lecturer to the moderator and facilitator of self-directed student learning activities. To speak in a proverb, the ideal ePedagogy scenario where technology acts as facilitator of the learning process, the teacher needs to move from „the sage on the stage to the guide on the side". It is, at its core, this reflection and change process that the individual teacher needs to accomplish, what is dubbed here the development of individual eCompetence.

The process of eCompetence development on individual level has to be embedded into an organisational concept that details how the university can support the ICT competence development of its academic staff. This may be best done by linking the individual competence building to specific organisational objectives that are seen as priority issues. In this case the idea is to link the eCompetence development of the individual teacher with specific portions of the Bologna process that are is being implemented currently at the majority of European universities and that bear relevance for fostering the normative policy objective of enabling flexible, student-centered learning. More into detail the issue of eCompetence and enhancing flexible learning may play a supportive role for the following areas in the Bologna Process:

- the role of teaching and learning in the common quality assurance framework,
- the curriculum development based on the modularisation model and the life-long learning perspective,
- the support of flexible learning paths,
- the promotion of European dimensions in higher education,
- and the enrichment the student mobility schemes with complementary technology-based modules

The asset of the eBologna integration into the eCompetence topic is that the individual competence building and the application of ICT into teaching and learning is embedded into existing organisational processes and requirements that the university management supports. As mentioned above, eBologna is a pioneer field and the identification and concepts that create synergies between building individual teaching competence in ICT and building individual teaching competence re-

lated to specific Bologna change processes are considered as an essential research and development challenge.

In case these synergies can be created, the competence development will be based on a needs analysis that is identified in the specific teaching and learning context of the university teacher, and the pedagogical scenario that is conceptualised for the use of ICT (e.g. a specific virtual mobility tool) will be consistent with the operating organisational environment (e.g. the support of student mobility in European higher education). In a possible eBologna scenario the common point of departure for the development of individual and organisational eCompetence are the challenges that the realisation of the Bologna policy framework pose to the European universities.

The technological challenge that the development of eCompetence in higher education poses is rooted in the need to establish a knowledge management approach that is not restricted to the pure representation of static information, but integrates the tacit knowledge and competences of the staff members in the pedagogical teaching and learning context. The important, value-adding knowledge in a „knowledge-intense" organisation is not primarily the static information, but it is the activity-related knowledge, the competences of the staff members. It is essential to find a model to integrate this knowledge management approach into the overall teaching and learning system of the university and into the different organisational or learning contexts, in which teachers and learners interact with each other.

4 Where do we go? – Research Questions related to eCompetence

These reflections do not give an immediate answer to the question of what the „ecompetent" university teacher looks like, or how higher education institutions can support the development of new, ICT-related competences for academic staff, but it does shed light on where we need to look to answer these questions. They also suggest that there is not likely to be any one simple answer, but that solutions will be geared to the logic of the specific teaching and learning culture and the specific ICT integration approach of the university.

The most important implication in the approach that this proposal takes on the development of eCompetences and the sustainable integration of ICT into higher education teaching and learning, is to position the human factor as the focal element of eLearning innovation in universities. Whatever the potential of the recently developed and future emerging technologies may be to technologically enhance the learning processes in universities, as long as the human actors them-

selves are not seen as the main target for implementing a meaningful change in the existing teaching and learning culture, there will be no structured model to systematically exploit and integrate the potential of ICT for the learning contexts in higher education.

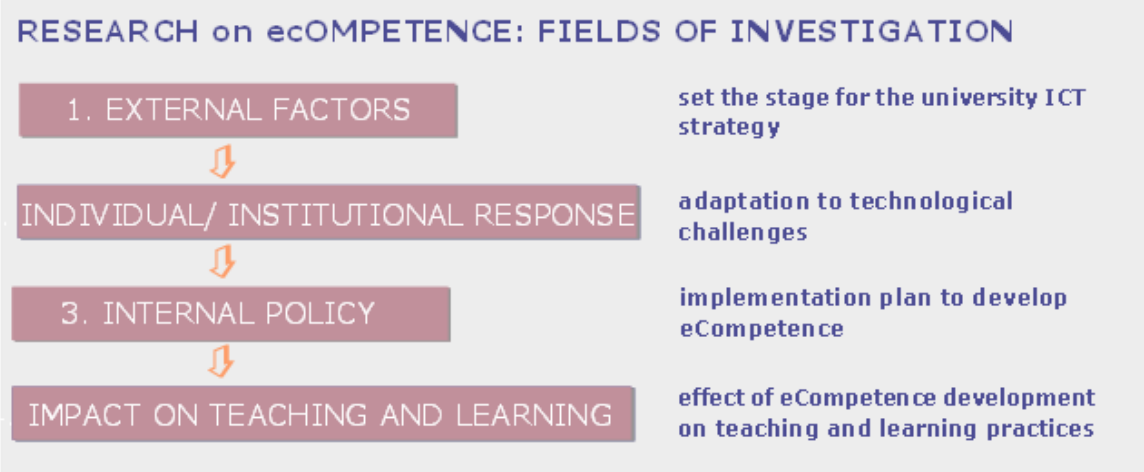

Abb. 2: Research on eCompetence – Fields of Investigation

As indicated in the discussion above, the full potential of technology to enhance learning can only be realised in higher education if we can raise an adequate awareness in a broader population of academic staff members. ICT is changing the teaching and learning culture and the quality of learning can be reasonably raised with the help of an ePedagogy, that reflects on the fostering of flexible learning models with help of technology.

The main scientific objective of the development of an eCompetence model on European scale is to explore interactions between the individual and organisational learning when it comes to technology-driven innovation and its consequences for the day-to-day business processes in universities, more specifically, the teaching and learning services and the delivery of knowledge to the students. If technology is to emphasise the shift from teaching to learning and to enhance a flexible, self-directed learning at individual, group and organisational level, the precondition for this full-flechted application of the ICT potential is a change in the organisation of knowledge on the individual teacher, the intermediate study course, department or faculty and the university leadership level. These three levels have been identified as the main points of departure for the research on eCompetence-related activity patterns and for the implementation of prototype models that aim to systematically support the ICT-related competence development of the university staff.

The main goal of the development of an eCompetence model on European scale is to improve how current and emerging ICT can mutually enhance individual and organisational learning processes in the context of teaching and learning in higher

education. The aim to reach this goal is to widen the use of ICT in teaching and learning in higher education by addressing the members within academic staff and university leadership open for eLearning innovation (the early majority) with a wide pattern of eCompetence development activities.

The main rationale behind the development of an eCompetence model on European scale is the assumption that in a university both the individual teacher and and the organisation as a whole need to acquire, store, distribute and use knowledge related to the innovative use of ICT in the teaching and learning services as one core business process of higher education. The management of technological innovation in such a complex organisation as a university is far from simple. We have learned from evidence related to research dealing with the outcomes of already executed eCompetence programs that the traditional way of sending university teachers to ICT-related courses is neither well accepted within academic nor bringing up the needed new technological competences.

Rather we have to investigate in alternative approaches to competence development emphasising the informal competence development that takes place in specific contexts. A major challenge is set for the technological support of this informal learning process by a knowledge management system that will intend to represent and help to organise the tacit ICT competence profiles of the university teachers and of the involved leadership members.

5 Come to Grips: Ongoing European eCompetence Project Activities

In order to come to grips with the different levels and perspectives from which these research challenges can and should be addressed, a broad research programme is needed which reflects these levels and perspectives. Our research needs to address first of all, the broad perspective from which university as well as university policy makers attempt to organise the technological innovation process that ICT causes within universities and the consequences for the way the students learn as knowledge workers in the knowledge society. At the same time, our research should provide insight into the strategies that are used and the conditions that are created to support the development of eCompetences and thus improve the integration of ICT into higher education.

The primary objective of the development of an eCompetence model on European scale is to enhance the state of the art of innovative ICT use in higher education by providing answers to the research questions outlined in Section 2.4. In order to achieve this, it will be necessary to develop a fully documented scientific knowledge base containing the information and indicators required to answer these and

related questions concerning the effectiveness of eCompetence models in higher education policies in meeting the challenges posed by the innovative force of new technologies. The research and conceptions that are realised within the ongoing European eCompetence Initiative contribute to the creation of this scientific knowledge base which in the long term may foster in the higher education area the strategic EU policy goal in IST, that is, to technologically enhance learning by the use of ICT.

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